

# Hui Su

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## Education

- **Ph.D.** Atmospheric Sciences, University of Washington (1998)
- **B.S. (with honors)**, Atmospheric Dynamics, Peking University (1991)

## Professional Experience

- **Research Scientist** (2007-present); Scientist (2006-2007); Contractor Scientist (2005-2006)  
Jet Propulsion Laboratory, California Institute of Technology, U.S.A.

### Visiting Researcher (2007-present)

Joint Institute for Regional Earth System Science and Engineering, University of California, Los Angeles, CA

#### Major responsibilities include:

##### o **Funded Research Projects:**

- PI: NASA ROSES13-NASA Energy and Water Cycle Study, \$460.48K, “Constraining Climate Sensitivity Through Quantification of Circulation-Cloud Feedback Using Satellite Observations and Reanalysis Data”
- PI: NASA ROSES13-Aura Science Team, \$670.96K, “Untangling Thermodynamic and Dynamic Control of Upper-Tropospheric Water Vapor Using Aura MLS Data and CMIP5 Model Simulations”
- PI: NASA ROSES10-NASA Energy and Water Cycle Study, \$258.7K, “Using NEWS Water and Energy Cycle Products to Investigate Processes that Control Cloud Feedback”
- PI: NASA ROSES10-Aura Science Team, \$691.9K, “Investigating the Influence of Asian Aerosol Pollution on the Water Vapor Transport from the Troposphere to the stratosphere”
- PI: NASA ROSES07-Aura Science Team, \$476.3K, “Radiative Impact of Cirrus Clouds on Tropical Troposphere to Stratosphere Transport”
- PI: JPL Advanced Concepts FY14, \$34.3K, “Observation System Simulation Experiment to Evaluate Impact of CubeSat using WRF 3D-Var Data Assimilation”
- PI: JPL R&TD FY08, \$137.4K, “Studying Tropical Cirrus Radiative Effect and its Climate Feedbacks using CloudSat and other A-Train Cloud Observations”
- PI: SURP DRDF FY06, \$43.6K, “Improving Our Understanding of Large-scale Dehydration Processes Near the Tropical Tropopause by Comparing MLS Observations and the GFDL AM2 Model Simulations”
- Co-I/Institutional PI: NASA ROSES08-Hurricane Science Research Program, \$131.10K (JPL portion)
- Co-I/Institutional PI: NASA ROSES11-Hurricane Science Research Program, \$100.24K (JPL portion)
- Co-I: NASA ROSES13-NASA Data for Operation and Assessment (“Post-CMIP5 Climate Model Evaluation”)
- Co-I: NASA ROSES12-Modeling, Analysis and Prediction (“Climate Model Improvement”)
- Co-I: NASA ROSES10-Enhancing the Capability of Computational Earth System Models and Data for Operation and Assessment (“CMIP5 Climate Model Evaluation”)
- Co-I: NASA ROSES10-Aura Science Team (“CMIP5 Climate Model Evaluation”)
- Co-I: NASA ROSES07-Accelerating Operational Use of Research Data (“Hurricane Information System”)
- Co-I: NASA ROSES06-Interdisciplinary Research in Earth Science (“Aerosol Effects on Tropical Cirrus”)
- Co-I: NSF (2009-2012) “Investigation of the Aerosol Indirect Effect on Ice Clouds and its Climate Impact Using A-Train Satellite Data and a GCM”

##### o **Postdoctoral scholars supervised/co-supervised:**

- Hani Takahashi (2013-present), Caltech postdoctoral scholar
- Lei Huang (2013-present), Caltech postdoctoral scholar
- Yuan Wang (2013-present), Caltech postdoctoral scholar
- Panagiotis Vergados (2013-present), Caltech postdoctoral scholar
- Longtao Wu (2010-present), currently JPL technologist
- Jennifer Small (2009-2012), currently at University of Hawaii as an assistant professor
- Rohini Bhawar (2009-2011), currently at University of Pune, India, as an assistant professor

##### o **Graduates (G), undergraduates (U), and high school (H) summer students mentored/co-mentored:**

- Ryan Stanfield (G), University of North Dakota (2014)
- Patrick Brown (G), Duke University (2014)
- Katie Antilla (U), California Institute of Technology (2014)
- David Qu (U), California Institute of Technology (2014)
- Sze-Ning Mak (U), University of Hong Kong (2014)

- Erica Dolinar (G), University of North Dakota, ND (2013)
- Sarah Worden (H), Crescenta Valley High School, CA (2013)
- Tiffany Chang (U), Brown University, RI (2013)
- Daniel Russell (G), University of California, Los Angeles, CA (2013)
- Nicholas Tang (U), University of California, Berkeley, CA (2012)
- Lei Huang (G), University of Texas, Austin, TX (2009, 2012)
- Teresa Jiang (H), La Canada High School, CA (2010)
- Nicholas Tang (H), La Canada High School, CA (2010)
- Huiwen Chuang (G), University of Michigan, Ann Arbor, MI (2009)
- **Service on Students' Thesis Committee:**
  - Jennifer Walker, Ph.D candidate, California Institute of Technology (2013-present)
- **MLS project:** lead climate studies using MLS and other satellite data along with models; work with other MLS scientists to make science discoveries and advance science understanding; advocate MLS current and future missions; contribute to JPL climate research programs
- **CloudSat project:** lead analysis of CloudSat data and contribute to CloudSat mission (received \$493.4K)
- **Assistant Researcher** (1998-2005), Dept. of Atmos. Sci., University of California, Los Angeles, CA
  - Core member for developing the quasi-equilibrium tropical circulation model (QTCM) for coupled atmosphere-ocean-land modeling
  - Led modeling studies on tropical dynamics, convection, and ENSO teleconnection
  - Technical consultant for QTCM users
- **Research Assistant** (1993-1998), Dept. of Atmos. Sci., University of Washington, Seattle, WA
  - Mesoscale and cloud-resolving scale modeling of tropical convection and its interaction with large-scale dynamics
- **Research Assistant** (1991-1993), Dept. of Geophysics, Peking University, Beijing, China
  - Mesoscale modeling of vortex over Tibetan Plateau

## Selected Awards

- **NASA Group Achievement Award** for *Aura MLS Team* (2014)
- **JPL Team Bonus Award** for *Earth Ventures Proposal Team* (2014)
- **JPL Team Bonus Award** for *CMIP5 climate model evaluation publication* (2012)
- **JPL Team Bonus Award** for *EV-I proposal writing team* (2012)
- **NASA Group Achievement Award** for *Genesis and Rapid Intensification Process (GRIP) team* (2011)
- **NASA Exceptional Scientific Achievement Medal** for *major advances in the understanding of water vapor and cloud feedbacks on climate change through quantitative analysis of observations from multiple NASA satellites* (2010)
- **JPL Lew Allen Award** for *Excellence* (2008)
- **JPL Team Bonus Award** for *Hurricane team* (2008)
- **NASA Group Achievement Award** for *Aura MLS Science Team* (2006)

## Peer-Reviewed Publications (complete list on the following pages)

- 57 peer-reviewed publications to date (20 first-authored)
- 1504 total citations
- H-Index: 20

## Invited Talks at Major International Conferences/Department Seminars

- Oct 16, 2013, Dept. Environ. Sci. and Engineering, Ewha Womans University, Seoul, South Korea
- Feb 5, 2013, Dept. of Atmos. Sci. Colloquia, Texas A&M University, College Station, TX
- Dec 7, 2012, AGU Fall Meeting, San Francisco, CA
- Nov 6, 2012, Convection Workshop, Dept. of Atmos. Sci., Colorado State University, Fort Collins, CO
- Oct 18, 2012, Geophysical Fluid Dynamic Laboratory, Princeton University, Princeton, NJ
- Dec 8, 2011, AGU Fall Meeting, San Francisco, CA
- May 20, 2011, Convection Workshop, Dept. of Atmos. Sci., Colorado State University, Fort Collins, CO
- June 29, 2010, Dept. of Atmos. Sci. Colloquia, National Taiwan University, Taipei, Taiwan, ROC
- June 21, 2010, Research Center for Environmental Changes, Academia Sinica, Taipei, Taiwan, ROC
- Apr 16, 2009, Dept. of Atmos. Oceanic and Space Sci. Colloquia, University of Michigan, Ann Arbor, MI
- Aug 15, 2007, Laboratory of Atmospheres Distinguished Researcher Seminar Series, NASA Goddard Space Flight Center, Greenbelt, MD
- Aug 14, 2007, National Institute of Aerospace and NASA Langley Research Center Science Lecture Series, Hampton, VA

- Jul 24, 2006, AGU/Western Pacific Geophysics Meeting (WPGM), Beijing, China
- Apr 20, 2006, Dept. of Physics Colloquia, New Mexico Institute of Mining and Technology, Socorro, NM

### **Conference Session Convener**

- Session Convener, constraining climate model simulations and predictions using observations, AGU Fall Meeting (2014)
- Session Convener, climate feedbacks: observations, modeling and theory, AOGS (2014)
- Session Convener, satellite measurements for climate model evaluation, diagnosis and improvements, AGU Fall Meeting (2013)
- Session Convener, Asian aerosols and their impacts on regional and global climate, AOGS-WPGM Joint Assembly (2012)
- Workshop science committee co-chair, CALIPSO-CloudSat-EarthCare joint workshop, Paris, France (2012)
- Session Convener, Aura science team meeting, Boulder, CO (2010)
- Session Convener, aerosol-cloud-precipitation relations: measurements and modeling, AGU/WPGM (2010)
- Session Convener, aerosol indirect effects: observations and modeling, AGU Fall Meeting (2008)
- Session Convener, coordinated observations and modeling of global water vapor variability and its feedback to climate change, AGU Fall Meeting (2006)

### **Other Professional Services**

- **Proposal Panel Review:**  
 NASA ROSES09-ACMAP, ROSES13-TERAQ, NASA Earth and Space Science Fellowship: 2010, 2013  
 DOE-Office of Biological & Environmental Research: 2012, 2013  
 NSF Mail Review (Climate & Large-Scale Dynamics): 2007, 2010, 2012  
 JPL R&TD, SURP, DRDF: 2007, 2009, 2010, 2011, 2012, 2013  
 JPL EV Mission Proposal: SABLE (2011), StormSat (2011), INVEST (2012), AREX (2013)  
 JPL Decadal Survey Mission-Extreme Weather RTD (2013)  
 JPL Flight Project Senior Review Proposal: MLS, AIRS, CloudSat, GRACE (2013)
- **Journal Article Review:**  
 AGU/AMS journals, ACP, QJRMS, Climate Dynamics (1999-present), 1-2 articles per month on average  
 IPCC Fifth Assessment Report (AR5): Government Review and Expert Review (2012)
- **JPL Center for Climate Sciences (CCS) Atmospheric Composition and Convection Workshop co-lead** (2014)
- **Aura Climate Working Group co-chair** (2010-present)
- **JPL A-Team Study (Climate Models) co-lead** (2013)
- **JPL Science Visitor and Colloquium Program coordinator** (2010-present)
- **JPL Aerosol-Cloud Seminar coordinator** (2010-2012)
- **JIFRESSE Merit Increase Committee** (2013-present)
- **Judge** for the JPL Postdoctoral Poster Award (August 2013) and the Caltech SURF Competition (November 2013)
- **Technical Symposium Committee Chair**, Chinese-American Engineers and Scientists Association of Southern California (CESAEC) (2014-15)
- **Scholarship Committee**, Chinese-American Engineers and Scientists Association of Southern California (CESAEC) (2013-present)
- **Executive Committee Secretary**, Chinese-American Oceanic and Atmospheric Association (COAA), Southern California Chapter (2006-2009)

## Peer-Reviewed Publications

1. Wang, Y., **H. Su**, J. H. Jiang, N. L. Livesey, M.L. Santee, P. C. Stek, L. Froidevaux, W. G. Read, and J. Anderson, The Role of the Stratospheric Water Vapor in Global Warming, *Geophys. Res. Lett.*, in review.
2. Huang, L., J. H. Jiang, Z. Wang, **H. Su**, M. Deng, and S. Massie, Climatology of Cloud Water Content Associated with Different Cloud Types Observed by A-Train Satellites, *J. Geophys. Res.*, in review.
3. Wu, L., **H. Su**, R. G. Fovell, T. J. Dunkerton, Z. Wang and B. H. Kahn (2014), Impacts of environment moisture on intensification of Hurricane Earl (2010), *Mon. Wea. Rev.*, in review.
4. Ao, C., J. H. Jiang, A. Mannucci, **H. Su**, O. Verkhoglyadova, C. Zhai, J. Cole, L. Donner, T. Iversen, C. Morcrette, L. Rotstain, M. Watanabe, and S. Yukimoto, Evaluation of CMIP5 upper troposphere geopotential height with GPS radio occultation observations, *J. Geophys. Res.*, in review.
5. Jiang, J.H., **H. Su**, C. Zhai, T.J. Shen, T. Wu, J. Zhang, J. Cole, K. von Salzen, L.J. Donner, C. Seman, A. Del Genio, L.S. Nazarenko, J.L. Dufresne, M. Watanabe, C. Morcrette, T. Koshiro, H. Kawai, A. Gettelman, L. Millán, W.G. Read, N.J. Livesey, Y. Kasai, and M. Shiotani, Evaluating the diurnal cycle of upper tropospheric ice clouds in climate models using SMILES observations, *J. Atmos. Sci.*, in press.
6. **Su, H.**, J. H. Jiang, C. Zhai, T. J. Shen, J. D. Neelin, G. L. Stephens, and Y. L. Yung, Weakening and strengthening structures in the Hadley Circulation change under global warming and implications for cloud response and climate sensitivity, *J. Geophys. Res.*, 119, 5787–5805, doi:10.1002/2014JD021642, 2014.

### NASA Feature Story:

<http://www.nasa.gov/jpl/news/earth-climate-20140521/>

<http://www.jpl.nasa.gov/news/news.php?release=2014-160>

7. Lebsock, M., and **H. Su**, Application of Active Spaceborne Remote Sensing for Understanding Biases Between Passive Cloud Water Path Retrievals, *J. Geophys. Res.*, 119, 8962–8979, doi:10.1002/2014JD021568, 2014.
8. Fovell, R. G., Y. P. Bu, K. L. Corbosiero, W.-W. Tung, Y. Cao, H. C. Kuo, L.-H. Hsu, and **H. Su**, Influence of cloud microphysics and radiation on tropical cyclone structure and motion: A review, AMS Michio Yanai Symposium Monograph, 2014.
9. Dolinar, E. K., X. Dong, B. Xi, J. H. Jiang and **H. Su**, Evaluation of CMIP5 Simulated Clouds and TOA Radiation Budgets Using NASA Satellite Observations, *Climate Dynamics*, DOI: 10.1007/s00382-014-2158-9, 2014.
10. Bhawar, R. L., J. H. Jiang, **H. Su**, and M. J. Schwartz, Variation of upper tropospheric clouds and water vapour over the Indian Ocean, *Int. J. Climatol.*, DOI: 10.1002/joc.3942, 2014.
11. Takahashi, H., **H. Su**, J. H. Jiang, Z. Luo, S.-P. Xie, and J. Hafner, Tropical Water Vapor Variations During the 2006-07 and 2009-10 El Niños: Satellite Observation and GFDL AM2.1 Simulation, *J. Geophys. Res.*, 118, 16, 8910–8920, doi:10.1002/jgrd.50684, 2013.
12. Wu, L., **H. Su**, and J. H. Jiang, Regional simulation of aerosol impacts on precipitation during the East Asian summer monsoon, *J. Geophys. Res.*, 118, 6454-6467, doi: 10.1002/jgrd.50527, 2013.
13. Vergados P., A. Mannucci, **H. Su**, Moist thermodynamic structure of tropical cyclones from GPS radio occultations, *J. Geophys. Res.*, 118, 9401–9413, doi: 10.1002/jgrd.50698, 2013.
14. Huang, L., J.H. Jiang, J.L. Tackett, **H. Su**, and R. Fu, Seasonal and Diurnal Variations of Aerosol Extinction Profile and Type Distribution from CALIPSO 5-year Observations, *J. Geophys. Res.*, 118, 10, 4572–4596, doi:10.1002/jgrd.50407, 2013.
15. **Su, H.**, J. H. Jiang, C. Zhai, V.S. Perun, J.T. Shen, A. Del Genio, L.S. Nazarenko, L.J. Donner, L. Horowitz, C. Seman, C. Morcrette, J. Petch, M. Ringer, J. Cole, M. Mesquita, T. Iversen, J.E. Kristjansson, A. Gettelman, L. Rotstain, S. Jeffrey, J.L. Dufresne, M. Watanabe, H. Kawai, T. Koshiro, T. Wu, E.M. Volodin, T. L'Ecuyer, J. Teixeira, and G.L. Stephens, Diagnosis of Regime-dependent Cloud Simulation Errors in CMIP5 Models Using “A-Train” Satellite Observations and Reanalysis Data, *J. Geophys. Res.*, 118, 7, 2762-2780, 10.1029/2012JD018575, 2013.
16. **Su, H.**, and J.H. Jiang, Tropical Clouds and Circulation Changes During the 2006-07 and 2009-10 El Niños, *J. Climate*, 26, 399–413, doi:10.1175/JCLI-D-12-00152.1, 2013.
17. Wu, L., **H. Su**, R. G. Fovell, B. Wang, J. T. Shen, B. H. Kahn, S. M. Hristova-Veleva, B. H. Lambriksen, E. J. Fetzer, and J. H. Jiang, Relationship of environmental relative humidity with North Atlantic tropical cyclone intensity and intensification rate, *Geophys. Res. Lett.*, 39, L20809, doi:10.1029/2012GL053546, 2012.
18. Jiang, J.H., **H. Su**, C. Zhai, V.S. Perun, A. Del Genio, L.S. Nazarenko, L.J. Donner, L. Horowitz, C. Seman, J. Cole, A. Gettelman, M. Ringer, L. Rotstain, S. Jeffrey, T. Wu, F. Brient, J.-L. Dufresne, H. Kawai, T. Koshiro, M. Watanabe, T. L'Ecuyer, W.G. Read, J.W. Waters, B. Tian, J.P. Teixeira, and G.L. Stephens, Evaluation of Cloud and Water Vapor Simulations in IPCC AR5 Climate Models Using NASA “A-Train” Satellite Observations, *J. Geophys. Res.*, 117, D14105, 24 PP, 10.1029/2011JD017237, 2012.
19. Wu, L., **H. Su**, J.H. Jiang, and W.G. Read, Hydration or dehydration: competing effects of upper

- tropospheric cloud radiation on the TTL water vapor, *Atmos. Chem. Phys.*, 12, 7727-7735, 10.5194/acp-12-7727-2012, 2012.
20. Gu, Y., K.N. Liou, J.H. Jiang, **H. Su**, and X. Liu, Dust aerosol impact on North Africa climate: a GCM investigation of aerosol-cloud-radiation interactions using A-Train satellite data, *Atmos. Chem. Phys.* 12, 1667-1679, doi:10.5194/acp-12-1667-2012, 2012.
  21. Small, J.D., J.H. Jiang, and **H. Su**, Relationships of biomass burning aerosols with precipitation and cloud properties in Australia, *Geophys. Res. Lett.* 38, L23802, doi:10.1029/2011GL049404, 2011.
  22. Wu, L., **H. Su** and J. H. Jiang, Regional simulations of deep convection and biomass burning over South America. Part I: Model evaluations using multiple satellite datasets. *J. Geophys. Res.*, 116, D17208, doi:10.1029/2011JD016105, 2011.
  23. Wu, L., **H. Su** and J. H. Jiang, Regional simulations of deep convection and biomass burning over South America. Part II: Biomass burning aerosol effects on clouds and precipitation. *J. Geophys. Res.*, 116, D17209, doi:10.1029/2011JD016106, 2011.
  24. **Su, H.**, J.H. Jiang, J. Teixeira, A. Gettelman, X. Huang, G. Stephens, D. Vane, and V.S. Perun, Comparison of Regime-Sorted Tropical Cloud Profiles Observed by CloudSat with GEOS5 Analyses and Two General Circulation Model Simulations, *J. Geophys. Res.*, 116, D09104, doi:10.1029/2010JD014971, 2011.
  25. **Su, H.**, J. H. Jiang, X. Liu, J. E. Penner, W. G. Read, S. T. Massie, M. R. Schoeberl, P. Colarco, N. J. Livesey, and M. L. Santee, Observed Increase of TTL Temperature and Water Vapor in Polluted Clouds over Asia, *J. Climate*, **24**, 2728-2736, doi: 10.1175/2010JCLI3749.1, 2011.
  26. Jiang, J.H., **H. Su**, C. Zhai, S.T. Massie, M.R. Schoeberl, P.R. Colarco, S. Platnick, Y. Gu, and K.N. Liou, Influence of convection and aerosol pollution on ice cloud particle effective radius, *Atmos. Chem. Phys.* **11**, 457-463, doi:10.5194/acp-11-457-2011, 2011.
  27. Jiang, J.H., **H. Su**, S. Pawson, H.C. Liu, W. Read, J.W. Waters, M. Santee, D.L. Wu, M. Schwartz, N. Livesey, A. Lambert, R. Fuller, and J.N. Lee, Five-year (2004-2009) Observations of Upper Tropospheric Water Vapor and Cloud Ice from MLS and Comparisons with GEOS-5 analyses, *J. Geophys. Res.*, **115**, doi:10.1029/2009JD013256, 2010.
  28. **Su, H.**, J. H. Jiang, J. D. Neelin, B. Kahn, J. W. Waters, N. J. Livesey, and Y. Gu, Reply to comment by Roberto Rondanelli and Richard S. Lindzen on "Variations in convective precipitation fraction and stratiform area with sea surface temperature", *J. Geophys. Res.*, D06203, doi:10.1029/2009JD012872, 2010.
  29. Jiang, J. H., **H. Su**, S. T. Massie, P. Colarco, M. Schoeberl, S. Platnick, Aerosol-CO Relationship and Aerosol Effect on Ice Cloud Particle Size: Analyses from Aura MLS and Aqua MODIS Observations, *J. Geophys. Res.*, **114**, D20207, doi:10.1029/2009JD012421, 2009.
  30. **Su, H.**, J. H. Jiang, G.L. Stephens, D.G. Vane, and N.J. Livesey, Radiative effects of upper tropospheric clouds observed by Aura MLS and CloudSat, *Geophys. Res. Lett.*, **36**, L09815, doi:10.1029/2009GL037173, 2009.
  31. **Su, H.**, J.H. Jiang, D.G. Vane, and G.L. Stephens, Observed Vertical Structure of Tropical Oceanic Clouds Sorted in Large-scale Regimes, *Geophys. Res. Lett.* 35, doi:10.1029/2008GL035888, 2008.
  32. Huang, X., and **H. Su**, Cloud radiative effect on tropical troposphere to stratosphere transport represented in a large-scale model, *Geophys. Res. Lett.*, 35, L21806, doi:10.1029/2008GL035673, 2008.
  33. Jiang, J. H., **H. Su**, M. Schoeberl, S. T. Massie, P. Colarco, S. Platnick, N. J. Livesey: Clean and polluted clouds: relationships among pollution, ice cloud and precipitation in South America, *Geophys. Res. Lett.*, 35, L14804, doi:10.1029/2008GL034631, 2008.
  34. Fetzer, E. J., W. G. Read, D. Waliser, B. Kahn, B. Tian, H. Vömel, B. Irion, **H. Su**, A. Eldering, M. T. Juarez, J. H. Jiang, V. Dang: Comparison of Upper Tropospheric Water Vapor Observations from the Microwave Limb Sounder and Atmospheric Infrared Sounder, *J. Geophys. Res.*, 113, D22110, doi:10.1029/2008JD010000, 2008.
  35. Read, W.G., M.J. Schwartz, A. Lambert, **H. Su**, N.J. Livesey, W.H. Daffer, and C.D. Boone, "The Roles of Convection, Extratropical Mixing, and In-Situ Freeze-drying in the Tropical Tropopause Layer," *Atmos. Chem. Phys.*, 8, 6051-6067, 2008.
  36. **Su, H.** J. H. Jiang, Y. Gu, J. D. Neelin, B. H. Kahn, D. Feldman, Y. L. Yung, J. W. Waters, N. J. Livesey, M. L. Santee, and William G. Read, Variations of tropical upper tropospheric clouds with sea surface temperature and implications for radiative effects, *J. Geophys. Res.*, doi:10.1029/2007JD009624, 2008.
  37. Fovell, R., and **H. Su**, Impact of cloud microphysics on hurricane track forecasts, *Geophys. Res. Lett.* 34, L24810, doi:10.1029/2007GL031723, 2007.
  38. Jiang, J. H., N. J. Livesey, **H. Su**, L. Neary and J. C. McConnell, 2007: Connecting surface emissions, convective uplifting, and long-range transport of carbon monoxide in the upper-troposphere: New observations from Microwave Limb Sounder on Aura Satellite, *Geophys. Res. Lett.*, L18812, doi:10.1029/2007GL030638, 2007.

39. Read, W.G., A. Lambert, J. Bacmeister, R.E. Cofield, L.E. Christensen, D.T. Cuddy, W.H. Daffer, B.J. Drouin, E. Fetzer, L. Froidevaux, R. Fuller, R. Herman, R.F. Jarnot, J.H. Jiang, Y.B. Jiang, K. Kelly, B.W. Knosp, H.C. Pumphrey, K.H. Rosenlof, X. Sabouchi, M.L. Santee, M.J. Schwartz, W.V. Snyder, P.C. Stek, **H. Su**, L.L. Takacs, R.P. Thurstans, H. Vomel, P.A. Wagner, J.W. Waters, C.R. Webster, E.M. Weinstock, and D.L. Wu, Aura Microwave Limb Sounder upper tropospheric and lower stratospheric H<sub>2</sub>O and relative humidity with respect to ice validation, *J. Geophys. Res.* 112, D24S35, doi:10.1029/2007JD008752, 2007.
40. Liu, C., E. Zipser, T. Garrett, J. Jiang, **H. Su**: How do the water vapor and carbon monoxide “tape recorder” start near the tropical tropopause? *Geophys. Res. Lett.*, 34, L09804, doi:10.1029/2006GL029234, 2007.
41. Lin, X., J.-L. F. Li, M. J. Suarez, A. M. Tompkins, D. E. Waliser, M. M. Rienecker, J. Bacmeister, J. H. Jiang, H.-T. Wu, C. M. Tassone, J.-D. Chern, B. Chen, **H. Su**, 2006: A View of Hurricane Katrina With Early 21<sup>st</sup> Century Technology, *Eos Trans. AGU*, 87(41), 433, 2006.
42. **Su, H.**, D.E. Waliser, J.H. Jiang, J.-L. Li, W.G. Read, J.W. Waters, and A.M. Tompkins, 2006: Relationships of upper tropospheric water vapor, clouds and SST: MLS observations, ECMWF analyses and GCM simulations, *Geophys. Res. Lett.* 33, L22802, doi:10.1029/2006GL027582, 2006.
43. **Su, H.**, W.G. Read, J. H. Jiang, J.W. Waters, D.L. Wu, and E.J. Fetzer: Enhanced positive water vapor feedback associated with tropical deep convection: New evidence from Aura MLS, *Geophys. Res. Lett.*, 33, L05709, doi:10.1029/2005GL025505, 2006.
44. Neelin, J. D., M. Munnich, **H. Su**, J. E. Meyerson, and C. Holloway: Tropical drying trends in global warming models and observations, *Proc. Nat. Acad. Sci.*, 103, 6110-6115, 2006.
45. **Su, H.**, J. D. Neelin and J. E. Meyerson: Mechanisms for lagged atmospheric response to ENSO SST. *J. Climate*, 18, 4195-4215, 2005.
46. Neelin, J. D., and **H. Su**: Moist teleconnection mechanisms for the tropical South American and Atlantic sector during El Niño, *J. Climate*, 18, 3928-3950, 2005.
47. **Su, H.** and J. D. Neelin: Dynamical mechanisms for African monsoon changes during the mid-Holocene. *J. Geophys. Res.*, 110, D19105, doi:10.1029/2005JD005806, 2005.
48. **Su, H.**, J. D. Neelin, and J. E. Meyerson: Tropical tropospheric temperature and precipitation response to sea surface temperature forcing. In Ocean-Atmosphere Interaction and Climate Variability. *Geophysical Monograph Series*, 147, 379-392. C. Wang, S.-P. Xie, J. Carton, eds., *Amer. Geophys. Union*, 2004.
49. **Su, H.**, and J. D. Neelin: The scatter in tropical average precipitation anomalies. *J. Climate*, 16, 3966-3977, 2003.
50. Neelin, J. D., C. Chou, and **H. Su**: Tropical drought regions in global warming and El Niño teleconnections. *Geophys. Res. Lett.*, 30(24) 2275, doi:10.1029/2003GLO018625, 2003.
51. **Su, H.**, J. D. Neelin and J. E. Meyerson: Sensitivity of tropical tropospheric temperature to sea surface temperature forcing. *J. Climate*, 16, 1283-1301, 2003.
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